



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,486	10/07/2004	Masatsugu Nakano	Q83955	1546
23373	7590	12/16/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SCHINDLER, DAVID M	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11A

<b>Office Action Summary</b>	<b>Application No.</b> 10/510,486	<b>Applicant(s)</b> NAKANO ET AL.	
	<b>Examiner</b> David Schindler	<b>Art Unit</b> 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10, 12 and 19 is/are rejected.
- 7) ☒ Claim(s) 11, 13, 14, 15, 17, and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/07/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

### **DETAILED ACTION**

1. Applicant is advised that should claim 10 be found allowable, claim 19 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### ***Information Disclosure Statement***

2. It is noted that copies of references EP595448 and JP59-56959 listed on the Information Disclosure Statement of 10/07/2004 were not received, however the references have been considered and are cited on form PTO-892. Copies of these references are being included with this action.

#### ***Drawings***

3. Figures 73 and 74 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Objections***

6. Claims 10-13, and 18 are objected to because of the following informalities:

As to Claims 10 and 11,

The phrase "m-phase windings" on lines 7-8 of claim 10 and line 2 of claim 11 is indefinite and it is therefore recommended to remove the parenthesis around the phrase "(m is an integer of 3 or more)" on line 8 of claim 10 and lines 2-3 of claim 11.

As to Claim 11,

The formulas of Claim 11 are indefinite and it is therefore recommended to remove the parenthesis around the phrase after the formulas. It is noted to applicant that part of the phrase in parenthesis appears to be written in a narrative form and has some antecedent issues, and as such this should be corrected.

As to Claim 12,

The term " $3n$ " on line 2 is indefinite as  $n$  is not defined. It is recommended to remove the parenthesis around the phrase " $n$  is a natural number" on lines 2-3.

The phrase "is assumed" on line 2 is awkward as it renders the claim indefinite as the claimed features are not positively recited.

As to Claim 13,

The language used in this claim is awkward and unclear.

The phrase "the number of times of a number" on lines 3-4 lacks antecedent basis and is awkward.

The phrase "in the case" on line 2 is awkward and lacks antecedent basis.

As to Claim 18,

The phrase "a center and the rotation shaft of the rotor" on line 5 is unclear and awkward.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10 and 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakano et al. (6,891,365).

As to Claims 10 and 19,

Nakano et al. discloses a stator provided with a one-phase excitation winding and two-phase output windings; and a rotor having salient poles, wherein the two-phase output windings are wound around a plurality of teeth of the stator (Claim 1 – Column 28).

Nakano et al. does not explicitly disclose respective numbers of turns of the two-phase output windings are obtained by using m-phase windings (m is an integer of 3 or more) defined in advance to convert the numbers of turns of the m-phase windings into those of two-phase windings.

However, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). (See MPEP 2113).

Therefore, since Nakano et al. discloses the structure claimed in claim 1 as disclosed above, the claim is unpatentable over Nakano et al..

Art Unit: 2862

10. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (6,891,365) in view of Li (5,866,964).

As to Claim 12,

Nakano et al. does not disclose the number of teeth of the stator is assumed to be 3n.

Li discloses the number of the teeth of the stator is 12 (Column 4, Lines 56-62).

It would have been obvious to a person of ordinary skill in the art to modify Nakano et al. to include the number of the teeth of the stator is 12 as taught by Li in order to enhance the magnetic detection ability of the system.

As to Claim 16,

Nakano et al. does not disclose the number of teeth of the stator is twelve, and a shaft multiple angle is 4 or 8.

Li discloses the number of teeth of the stator is twelve, and a shaft multiple angle is 8 (Figure 1).

It would have been obvious to a person of ordinary skill in the art to modify Nakano et al. to include the number of teeth of the stator is twelve, and a shaft multiple angle is 8 as taught by Li in order to enhance the magnetic detection ability of the system.

***Allowable Subject Matter***

14. Claims 11, 13, 14, 15, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is an examiner's statement of reasons for allowance:

As to Claim 11,

The primary reason for the allowance of claim 11 is the inclusion of the two claimed formulas. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.



As to Claim 13,

The primary reason for the allowance of claim 13 is the inclusion of in the case in which the number of teeth of the stator is an odd number, a winding pattern of the excitation winding is a pattern repeated by the number of times of a number which is the same as a value of a divisor of the number of teeth. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 14,

The primary reason for the allowance of claim 14 is the inclusion of the number of teeth of the stator is nine, and a shaft multiple angle is 4 or 8. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 17,

The primary reason for the allowance of claim 17 is the inclusion of the numbers of turns of the two-phase output windings are adjusted such that the two-phase output windings do not pickup a magnetic flux of a spatial order which is the same as a spatial order of a change in permeance of the rotor or a magnetic flux of a spatial 0<sup>th</sup> order. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

As to Claim 18,

The primary reason for the allowance of claim 18 is the inclusion of the number of turns of the two-phase output windings are adjusted such that the two-phase output windings do not pick up a specific component of a gap magnetic flux which is generated when a rotation shaft of the rotor and a center of the stator deviate from each other or when a center and the rotation shaft of the rotor deviate from each other. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Schindler whose telephone number is (571) 272-2112. The examiner can normally be reached on M-F (8:00 - 5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2862

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David Schindler  
Examiner  
Art Unit 2862

DS

  
EDWARD LEEKOWITZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800